

## The identity of *Sphinx brunnus* Cramer and the taxonomic position of *Acharia* Huebner (Lepidoptera: Limacodidae)

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**Abstract.** The identity of *Sphinx brunnus* Cramer is established and *Acharia* Huebner is found to be a senior synonym of *Sibine* Herrich-Schaeffer. Taxa previously included in *Sibine* are listed. A lectotype for *Acharia brunna* is designated and illustrated. *Sibine zellans* Dyar and *S. berthans* Dyar are recognized as new junior synonyms of *Acharia brunna*.

### Introduction

The identity of *Sphinx brunnus* Cramer has not been recognized since its description in 1777. Consequently, the placement of the genus *Acharia* Huebner has been uncertain since its publication. Huebner ([1819]) included *Acharia* in his "Stirp III. Glaucopen, *Glaucopes*" as "Coitus [=genus] 2", between "Coitus 1. *Aclytia* Huebner" and "Coitus 3. *Macrocneme* Huebner", both currently placed in the Ctenuchinae (Arctiidae). Kirby (1892: 166) included *Acharia* in the Charadrinae [=Ctenuchinae], after *Teucer* Kirby [= *Telioneura* Felder], and designated *brunnea* [a misspelling] as the type species, as Huebner originally also assigned another species, *Sphinx coras* Cramer, to the genus (*coras* is currently considered a synonym of *Phobetron hipparchia* (Cramer), also Limacodidae). Hampson (1898-1920), however, did not mention either *Acharia* or *brunnus* in his monographs on the Syn tomidae [=Ctenuchinae] and Arctiidae. Therefore, *Acharia brunna* has remained unplaced until Fletcher and Nye (1982: 2) recently included it in the Limacodidae, as suggested to them by Becker.

These identity problems resulted from the inaccuracy of Cramer's figure and the unavailability of the type specimens to previous authors. Cramer's illustration (Fig. 1) depicts a uniformly brown-colored moth with falcate hindwings. No entomologist has ever located a specimen that matches the figure.

*Sphinx brunnus* was described from an unspecified number of speci-

mens from Surinam originally in the C. van Lennep collection. This collection passed on to Felder, then to Rothschild, and finally to the British Museum (Natural History) (BMNH). A specimen, presumably belonging to the type series, has been found at the BMNH. We examined this specimen (Fig. 2), have figured its genitalia (Fig. 4), and designate it here as the lectotype. The specimen matches Cramer's illustration very well, except for the translucent areas along the hindwing termen (Fig. 2). There are two reasons why no subsequent specimen has been found to match either Cramer's illustration or the type specimen. First, none of the plain brown specimens in collections have falcate hindwings



Fig. 1. Reproduction of figure 147c from Cramer, 1777.

Fig. 2. Lectotype male of *Acharia brunna* (BMNH) (forewing length about 14 mm).

Fig. 3. Holotype male of *Sibine zellans*, from Pará [=Belém], Brazil (USNM 40684).

as shown by Cramer (Fig. 1). Secondly, the type specimen was painted to match the figure, and the paint has partially peeled off (especially along the hindwing margins), giving the impression that the species belongs to the *auromacula* group of the genus *Sibine* herrich-Schaeffer, which have the hindwings partially translucent and with a falcate termen. However, none of the species belonging to the *auromacula* group (*auromacula* Schaus, *intensa* Dyar, *barbara* Dyar, *sibinides* Dyar, and *blanda* Dyar) have plain brown forewings. They all have two well defined white dots, a round one below the cell, and an elongate one beyond the cell apex, crossing R3+R4 and R5.

In the extensive series of *Sibine* in the National Museum of Natural History (USNM) and the Becker collection, we have found only two males which have plain dark brown wings that match the lectotype of *Acharia brunna*. These are the holotype of *S. zellans* Dyar (Fig. 3) (Pará [=Belém], Brazil, [no date], A.M. Moss) and a syntype of *S. berthans* Dyar (Villa Rica [=Villarrica], Paraguay, March 1926, F. Schade). *S. berthans* was described from two syntypes, a male and a female from the same locality, both in USNM. We hereby designate the male as lectotype. Without revision of the genus, we cannot be sure that the female paralectotype is conspecific with the lectotype, and do not treat it further here.

The external margin of the hindwings is straight in *Sibine zellans*, but slightly convex in *S. berthans*. However, the genitalia of both are identical and match perfectly those of *Acharia brunna*. The only differences mentioned in the original descriptions (Dyar, 1927: 547) were that *berthans* has the "wings rather less pointed" and the "spines of the penis [=cornuti of aedoeagus] are finer and more numerous than in *zellans*." We are convinced that they are all conspecific. We regard the differences in wing shape as individual or local variation, and the slight differences in cornuti as insignificant. Although it is widely distributed (Surinam, through the Amazon Basin, into Paraguay), apparently *brunna* does not readily come to light and is therefore rare in collections.

Dyar (1935) reviewed the species of *Acharia* (as *Sibine*), and gave a key with poor quality illustrations of wing surfaces. The genus, which includes several agriculturally important species, needs revision. Without a modern revision of all the species, it is not possible to assess the significance of the morphological variation discussed above.<sup>7</sup>

## Checklist

Except for *berthans* and *zellans*, which are newly synonymized under *brunna*, the taxa are listed as they presently stand in the literature. We expect that examination of type material of the older names, as well as newly accumulated material in collections, will result in many taxonomic changes. Forbes (1942) has suggested several taxonomic changes, but they should not be adopted without examination of the relevant types.

*Acharia* Huebner, [1819]

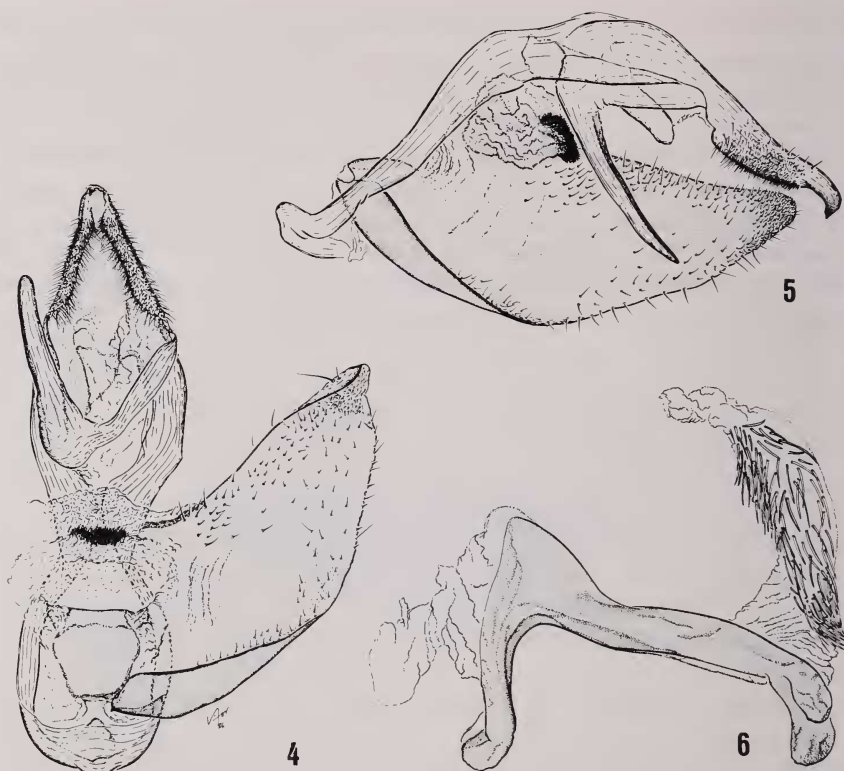


Fig. 4-6. Male genitalia of lectotype of *Acharia brunna*: 4: ventral view (manica not shown); 5: lateral view, 6: aedeagus, with vesica everted.

Sibine Herrich-Schaeffer, 1855, n. syn.

Empretia Clemens, 1860, n. syn.

Eupretia Walker, 1865, misspelling

Eupalia Walker, 1866, n. syn.

Episibine Dyar, 1898, n. syn.

*affinis* (Moeschler, 1883) (Sibine) n. comb.

*alicians* (Dyar, 1935) (Sibine) n. comb. [as subspecies of *nitens*]

*apicalis* (Dyar, 1900) (Sibine) n. comb.

*aurōmactila* (Schaus, 1896) (Sibine) n. comb.

*ausa* (Dyar, 1935) (Sibine) n. comb. [as subspecies of *stimulea*]

*barbara* (Dyar, 1905) (Sibine) n. comb.

*blanda* (Dyar, 1935) (Sibine) n. comb.

*bonaerensis* (Berg, 1878) (*Streblota*) n. comb.

*brunna* (Cramer, 1777) (*Sphinx*) n. comb.

*berthans* (Dyar, 1927) (Sibine) n. syn., n. comb.

*zellans* (Dyar, 1927) (Sibine) n. syn., n. comb.

*clarans* (Dyar, 1927) (Sibine) n. comb.

*didactica* (Dyar, 1927) (Sibine) n. comb.

*differentiata* (Bryk, 1953) (Sibine) n. comb. [as subspecies of *joyceans*]

- dorans* (Dyar, 1927) (Sibine) n. comb.  
*eucleides* (Dyar, 1905) (Sibine) n. comb.  
*extensa* (Schaus, 1896) (Sibine) n. comb.  
*francescans* (Dyar, 1927) (Sibine) n. comb.  
*fusca* (Stoll, 1780) (Phalaena) n. comb.  
*gertrudans* (Dyar, 1927) (Sibine) n. comb.  
*geyeri* (Fletcher, 1982) repl. name (Sibine) n. comb.  
     *nesea* (Geyer, [1833]) (Streblote) n. comb.  
*giseldans* (Dyar, 1927) (Sibine) n. comb.  
*helenans* (Dyar, 1927) (Sibine) n. comb.  
*horrida* (Dyar, 1905) (Sibine) n. comb.  
*hyperoche* (Dognin, 1914) (Sibine) n. comb.  
*intensa* (Dyar, 1905) (Episibine) n. comb.  
*iolans* (Dyar, 1927) (Sibine) n. comb.  
*joyceans* (Dyar, 1927) (Sibine) n. comb.  
*laberia* (Dyar, 1935) (Sibine) n. comb.  
*laurans* (Dyar, 1927) (Sibine) n. comb.  
*lophostigma* (Dognin, 1910) (Sibine) n. comb.  
*megasomoides* (Walker, 1866) (Eupalia) n. comb. [currently subspecies of  
     *rufescens*]  
*minuscula* (Bryk, 1953) (Sibine) n. comb. [as subspecies of *auromacula*]  
*modesta* (Cramer, 1777) (Phalaena) n. comb.  
*nesea* (Stoll, 1780) (Phalaena) n. comb.  
     *vidua* (Sepp, [1848]) (Phalaena) n. comb.  
     *fumosa* (Walker, 1855) (Nyssia) n. comb.  
*nitens* (Dyar, 1905) (Sibine) n. comb.  
*norans* (Dyar, 1927) (Sibine) n. comb.  
*ophelians* (Dyar, 1927) (Sibine) n. comb.  
*pauper* (Dyar, 1918) (Sibine) n. comb.  
*permessa* (Dyar, 1918) (Sibine) n. comb.  
*priscillans* (Dyar, 1927) (Sibine) n. comb.  
*quadratilla* (Dyar, 1935) (Sibine) n. comb.  
*quellans* (Dyar, 1927) (Sibine) n. comb.  
*reletiva* (Dyar, 1927) (Sibine) n. comb.  
*rollans* (Dyar, 1927) (Sibine) n. comb.  
*rufescens* (Walker, 1855) (Nyssia) n. comb.  
     *determinata* (Walker, 1865) (Nyssia) n. comb.  
     *plora* (Schaus, 1896) (Sibine) n. comb.  
     *pallescent* (Dognin, 1901) (Sibine) n. comb.  
*sabis* (Dyar, 1935) (Sibine) n. comb.  
*sarans* (Dyar, 1927) (Sibine) n. comb.  
*sibinides* (Dyar, 1905) (Episibine) n. comb.  
*stimulea* (Clemens, 1860) (Empretia) n. comb.  
     *ephippiatus* (Harris, 1869) (Limaodes) n. comb.  
*subalbicans* (Dyar, 1935) (Sibine) n. comb.  
*tontineans* (Dyar, 1927) (Sibine) n. comb.  
*trimacula* (Sepp, [1848]) (Phalaena) n. comb.  
*varia* (Walker, 1855) (Nyssia) n. comb.  
*violans* (Dyar, 1927) (Sibine) n. comb.  
*ximenans* (Dyar, 1927) (Sibine) n. comb.



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